



DEFINING OF PRESSURE AND DRAWBEAD HEIGHT FUNCTIONS IN SHEET METAL STRIPE TENSILE TEST OVER DRAWBEAD WITH VARIABLE PARAMETERS

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Summary: The present paper describes part of experimental investigation on especially laboratory computerized device which was built up with main purpose to perform sheet stripe tensile test over drawbead in conditions of variable contact pressure and variable drawbead height during the sliding and forming process. Test plan was provided use of 10 linear and nonlinear functions of contact pressure as well as 10 functions of drawbead height. In this paper, the procedures of determination parabolic and linear function of pressure and drawbead height are given. Examples of usage this functions in concrete experiment and obtained results also are given. Test results indicate that variable pressure and drawbead height can significantly influence the course of the sliding and forming process.

Keywords: sheet metal sliding test, drawbead, variable parameters

1. INTRODUCTION

Deep drawing of thin sheets is widely applied in modern industry, which makes it very important. That is the reason for ongoing tendencies to accomplish total control of forming process. In order to succeed in that, it is necessary to select, out of a large number of influential factors, the ones which can be influenced during the forming process, thus correcting it until it is completed successfully. There are only two such factors: contact pressure and drawbead height [1].

Process control through active complex systems requires constant dynamic feedback between the given goal function, controlled and controlling variables [2].

The goal functions and controlled variable can be different: wrinkle height, thinning in critical zone, flange motion, flange thickness change, friction force, forming force, tensile stress in work piece wall etc. The given goal functions are defined either

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